



AudioMaster® Two-Way Intercom

Model 310-MV

TWO-WAY INTERCOM WITH SUPERIOR SOUND QUALITY

- Multi-voltage design accepts 24VDC and 120VAC/240VAC
- Heavy-duty industrial intercom for indoor or outdoor applications
- Balanced line output
- Type 4X, IP56 enclosure
- UL Listed, CSA Certified and Marine Listed

Federal Signal's AudioMaster® 310-MV is an industrial intercom that provides reliable two-way communications and superior sound quality. This unit has a rugged Type 4X housing and is UL Listed and CSA Certified.

The AudioMaster 310-MV's standard features include volume control, call button, balanced line output, dust- and water-tight housing, listen/talk switch, remote device activation and the ability to power another intercom at 24VDC.

This heavy duty intercom will operate from -31°F to 150°F (-35°C to 66°C) in both indoor and outdoor applications. Remote device activation allows you to activate an auxiliary signal such as a horn or light.

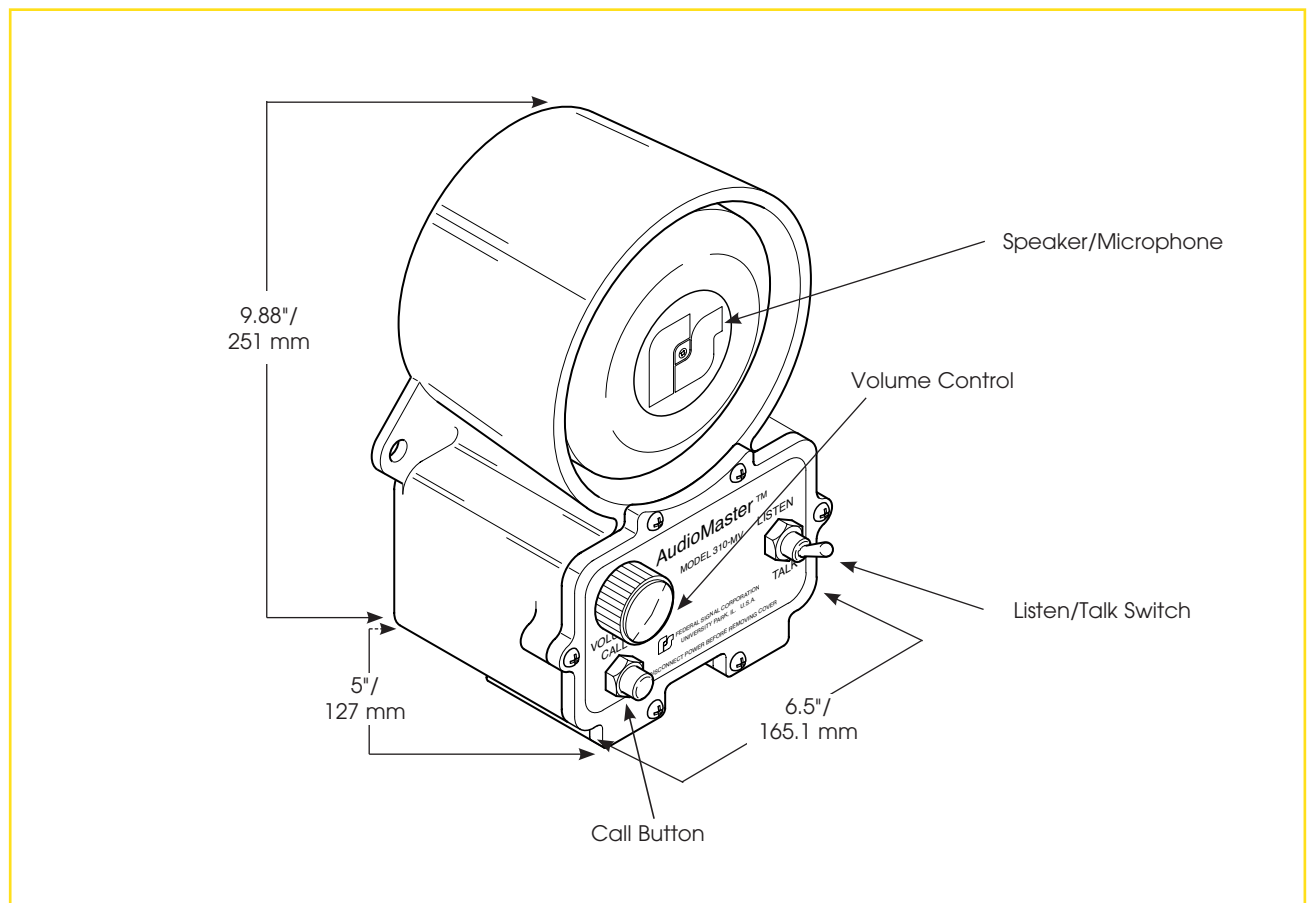
The AudioMaster 310-MV requires 24VDC, 120VAC or 240VAC to power each unit. The intercom is easy to operate. Press the switch down to talk and release to listen.

The 310-MV is ideal for use at oil refineries, petrochemical plants, offshore platforms, pulp and paper mills, water treatment facilities, airports, shipyards or anywhere reliable two-way communication is important for safe and efficient operation.

Model	Voltage	Operating Current	Standby Current	Frequency Response (-6dB)	Input Impedance
310-MV	24VDC	260mA	62mA	150Hz-12KHz	3400 ohms
	120VAC 50/60Hz	163mA	70mA	150Hz-12KHz	3400 ohms
	240VAC 50/60Hz	82mA	35mA	150Hz-12KHz	3400 ohms



TWO-WAY INDUSTRIAL INTERCOM (310-MV)



SPECIFICATIONS

Speaker Rating:	30 Watt	30 Watt
Operating Temperature:	-31°F to 150°F	-35°C to 66°C
Net Weight:	9.9 lbs.	4.5 kg
Shipping Weight:	11.5 lbs.	5.2 kg
Height:	9.88"	251.0 mm
Width:	6.5"	165.1 mm
Depth:	5.0"	127.0 mm

HOW TO ORDER

- Specify model number
- Optional Accessories:
Slave Kit (K8502017A)
- Please refer to Model Number Index
310-MV beginning on page 376

REPLACEMENT PARTS

<u>Description</u>	<u>Part Number</u>	<u>Description</u>	<u>Part Number</u>
PC Board Assembly	K2001915B	Kit, potentiometer	K8590237A
Connector, 10 pin	K140A326A-01	Kit, toggle switch	K8590298A
Resistor, 1K, 1W	K101216A	Kit, call button and boot	K8590241A
Fuse 250V, 1/2 Amp	K148A155A	Permanent Slave Kit	K8502017A
Fuse 250V, 1 Amp	K148A155A-01	Gasket, rubber	K8590013B



INTERCOM FOR HIGH AMBIENT NOISE ENVIRONMENTS

- Multi-voltage design accepts 24VDC, 120VAC and 240VAC
- Heavy-duty industrial intercom for indoor or outdoor applications
- Balanced line output
- Rated for Class I, Division 2
- Type 4X, IP65 enclosure
- UL and cUL Listed, CSA Certified and Marine Listed

AudioMaster® Hazardous Location Two-way Intercom

Model 310X-MV

Federal Signal's AudioMaster® 310X-MV is a two-way industrial intercom that provides reliable communications and superior sound quality. This unit has a rugged Type 4X housing and is rated for Class I, Division 2, Groups A, B, C, & D; Class II, Division 2, Groups F & G; and Class III.

The AudioMaster 310X-MV's standard features include volume control, call button, balanced line output, dust- and water-tight housing, listen/talk switch, remote device activation, and the ability to power another intercom at 24VDC.

This heavy duty intercom will operate from -31°F to 149°F (-35°C to 65°C) for both indoor and outdoor applications. Remote device activation allows you to activate an auxiliary signal such as a horn or light. The AudioMaster 310X-MV requires 24VDC, 120VAC or 240VAC to power each unit. The intercom is easy to operate. Press the switch down to talk and release to listen.

The AudioMaster is UL Listed and CSA Certified.

The 310X-MV is ideal for use at oil refineries, petrochemical plants, offshore platforms, pulp and paper mills, water treatment facilities, airports, shipyards or anywhere reliable two-way communication is important for safe and efficient operation.

Model	Voltage	Operating Current	Standby Current	Frequency Response (-6dB)	Input Impedance
310X-MV	24VDC	260mA	62mA	150Hz-12KHz	3400 ohms
	120VAC 50/60Hz	163mA	70mA	150Hz-12KHz	3400 ohms
	240VAC 50/60Hz	82mA	35mA	150Hz-12KHz	3400 ohms

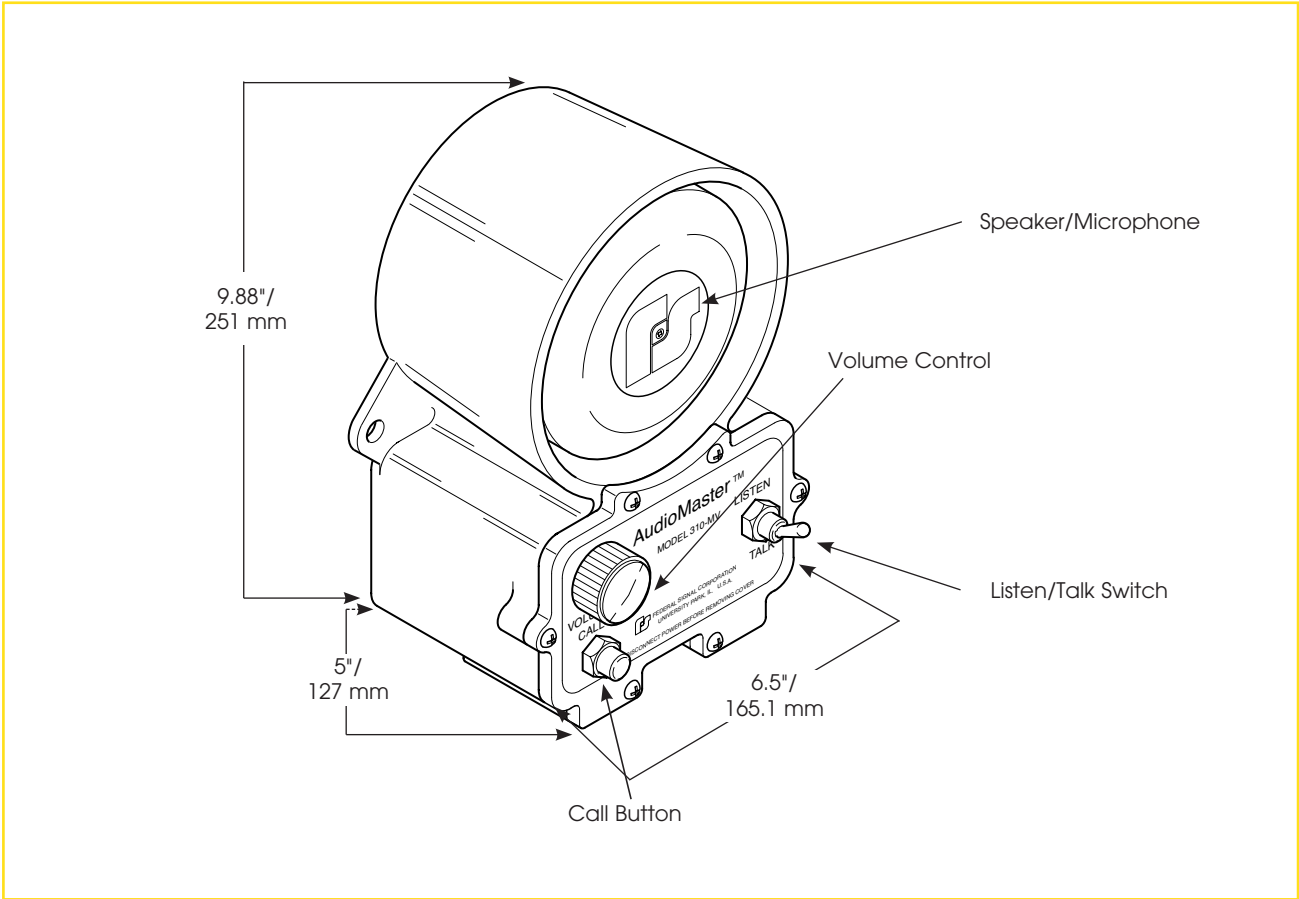
Hazardous Location Rating:

T-Code at Maximum Ambient Temperature, °C

Hazardous Location	40°C	66°C
Class I, Div 2, Groups A, B, C, D	T6	T5
Class II, Div 2, Groups F, G	T6	T5
Class III	T6	T5



TWO-WAY INDUSTRIAL INTERCOM (310X-MV)



SPECIFICATIONS

Speaker Rating:	30 Watt	30 Watt
Operating Temperature:	-31°F to 149°F	-35°C to 65°C
Net Weight:	10.1 lbs.	4.6 kg
Shipping Weight:	12.0 lbs.	5.4 kg
Height:	9.88"	251.0 mm
Width:	6.5"	165.1 mm
Depth:	5.0"	127.0 mm

HOW TO ORDER

- Specify model number
- Please refer to Model Number Index 310X-MV beginning on page 376

REPLACEMENT PARTS

<u>Description</u>	<u>Part Number</u>	<u>Description</u>	<u>Part Number</u>
PC Board Assembly	K2001915B-02	Kit, potentiometer	K8590237A
Connector, 10 Pin	K140A326A-01	Kit, toggle switch	K8590298A
Resistors, 1K, 1W	K101216A	Kit, call button and boot	K8590241A
Fuse 250V, 1/2 Amp	K148A155A	Fuse 250V, 1 Amp	K148A155A-01
Gasket, rubber	K8590013B		



INTERCOM FOR HIGH AMBIENT NOISE ENVIRONMENTS

- Multi-voltage design accepts 24VDC, 120VAC and 240VAC
- Heavy-duty industrial intercom
- Noise canceling microphone
- Balanced line output
- Type 3R enclosure
- UL Listed, CSA Certified and Marine Listed

AudioMaster® Two-way Intercom with Noise Canceling Microphone

Model 310-MV-MNC

Federal Signal's AudioMaster® 310-MV-MNC is a two-way industrial intercom that provides reliable communications and superior sound quality.

The AudioMaster 310-MV-MNC's standard features include volume control, call button, balanced line output, listen/talk switch, remote device activation, and the ability to power another intercom at 24VDC.

This heavy duty intercom will operate from -31°F to 150°F (-35°C to 66°C). The remote device activation feature allows you to activate an auxiliary signal such as a horn or light. The AudioMaster 310-MV-MNC requires 24VDC, 120VAC or 240VAC to power each unit. The intercom is easy to operate. Press the switch down to talk and release to listen.

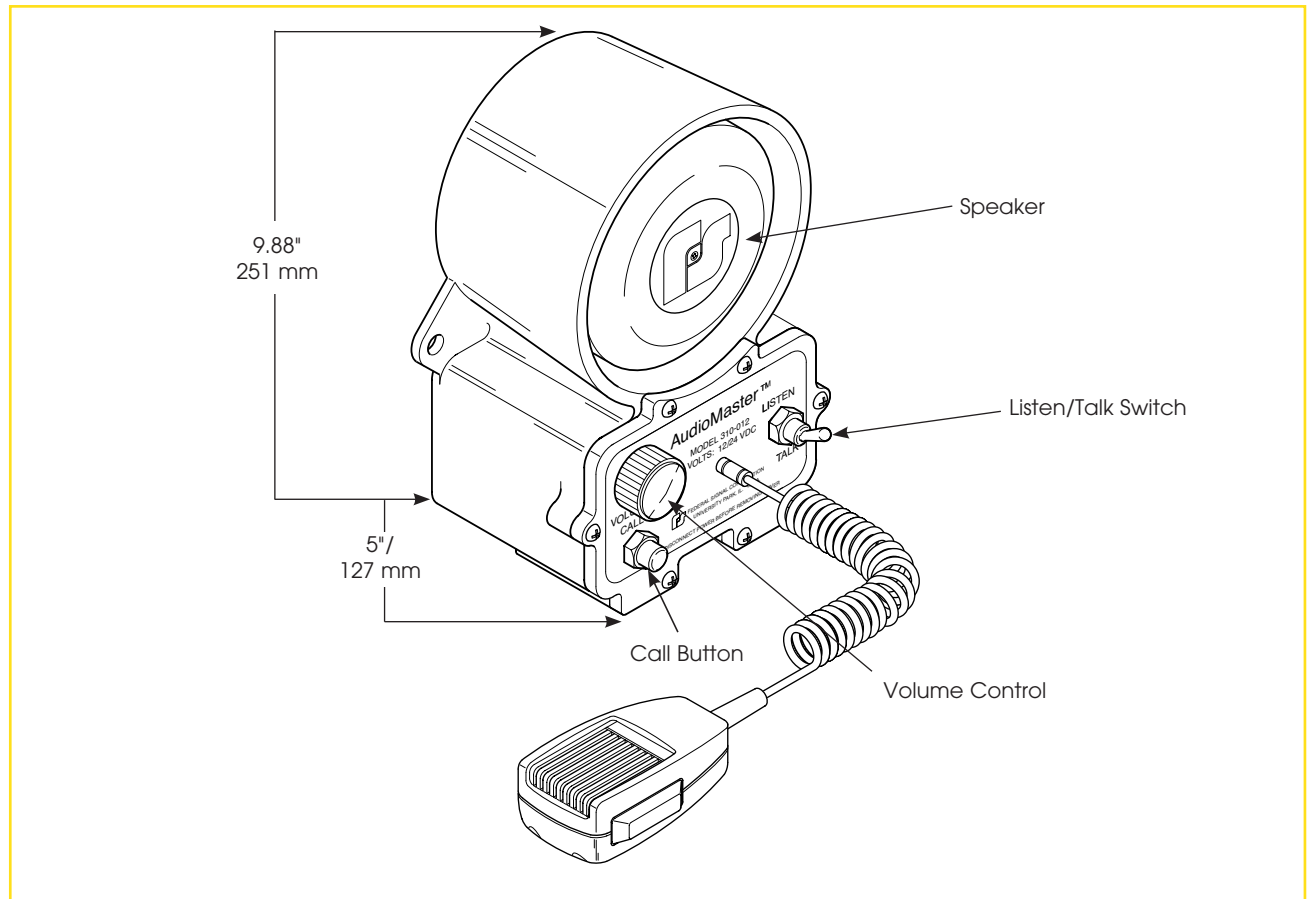
When the ambient noise level is too high for the standard 310-MV integrated microphone, the 310-MV-MNC noise canceling unit is used to improve transmission quality.

The 310-MV-MNC is ideal for use at oil refineries, petrochemical plants, offshore platforms, pulp and paper mills, water treatment facilities, airports, shipyards or anywhere reliable two-way communication is important for safe, efficient operation.

Model	Voltage	Operating Current	Standby Current	Frequency Response (-6dB)	Input Impedance
310-MV-MNC	24VDC	260mA	62mA	150Hz-12KHz	3400 ohms
	120VAC 50/60Hz	163mA	70mA	150Hz-12KHz	3400 ohms
	240VAC 50/60Hz	82mA	35mA	150Hz-12KHz	3400 ohms



TWO-WAY INDUSTRIAL INTERCOM (310-MV-MNC)



SPECIFICATIONS

Speaker Rating:	30 Watt	30 Watt
Operating Temperature:	-31°F to 150°F	-35°C to 66°C
Net Weight:	10.1 lbs.	4.6 kg
Shipping Weight:	12.0 lbs.	5.4 kg
Height:	9.88"	251.0 mm
Width	6.5"	165.1 mm
Depth:	5.0"	127.0 mm

HOW TO ORDER

- Specify model number
- Please refer to Model Number Index 310-MV-MNC beginning on page 376

REPLACEMENT PARTS

<u>Description</u>	<u>Part Number</u>	<u>Description</u>	<u>Part Number</u>
PC Board Assembly	K2001915B	Kit, potentiometer	K8590237A
Connector	K140A326A-01	Kit, toggle switch	K8590298A
Fuse 250V, 1/2 Amp	K148A155A	Kit, call button and boot	K8590241A
Fuse 250V. 1 Amp	K148A155A-01	Resistors, 1K, 1W	K101216A
Microphone	MNC-MC	Gasket, rubber	K8590013B



A LIGHT-DUTY TWO-WAY INTERCOM WITH SUPERIOR SOUND QUALITY

- Multi-voltage design accepts 24VDC, 120VAC and 240VAC
- Balanced line output
- Gain control
- Remote device activation
- TYPE 1, IP10 enclosure
- UL Listed and CSA Certified

AudioMaster® Light Duty Two-Way Intercom

Model 310LD-MV

Federal Signal's AudioMaster® light-duty industrial intercom provides reliable two-way communications and superior sound quality.

The AudioMaster 310LD-MV's standard features include internal volume control, balanced line output, Type 1 wall mount housing, integrated call/listen/talk switch, remote device activation, and the ability to power another intercom at 24VDC.

310LD-MV operates from -31°F to 150°F (-35°C to 66°C) for indoor applications. An integrated remote device activation feature allows you to activate an auxiliary signal such as a horn or light. The AudioMaster 310LD-MV requires 24VDC, 120VAC or 240VAC to power each unit. The intercom is easy to operate. Press the switch down to talk and release to listen.

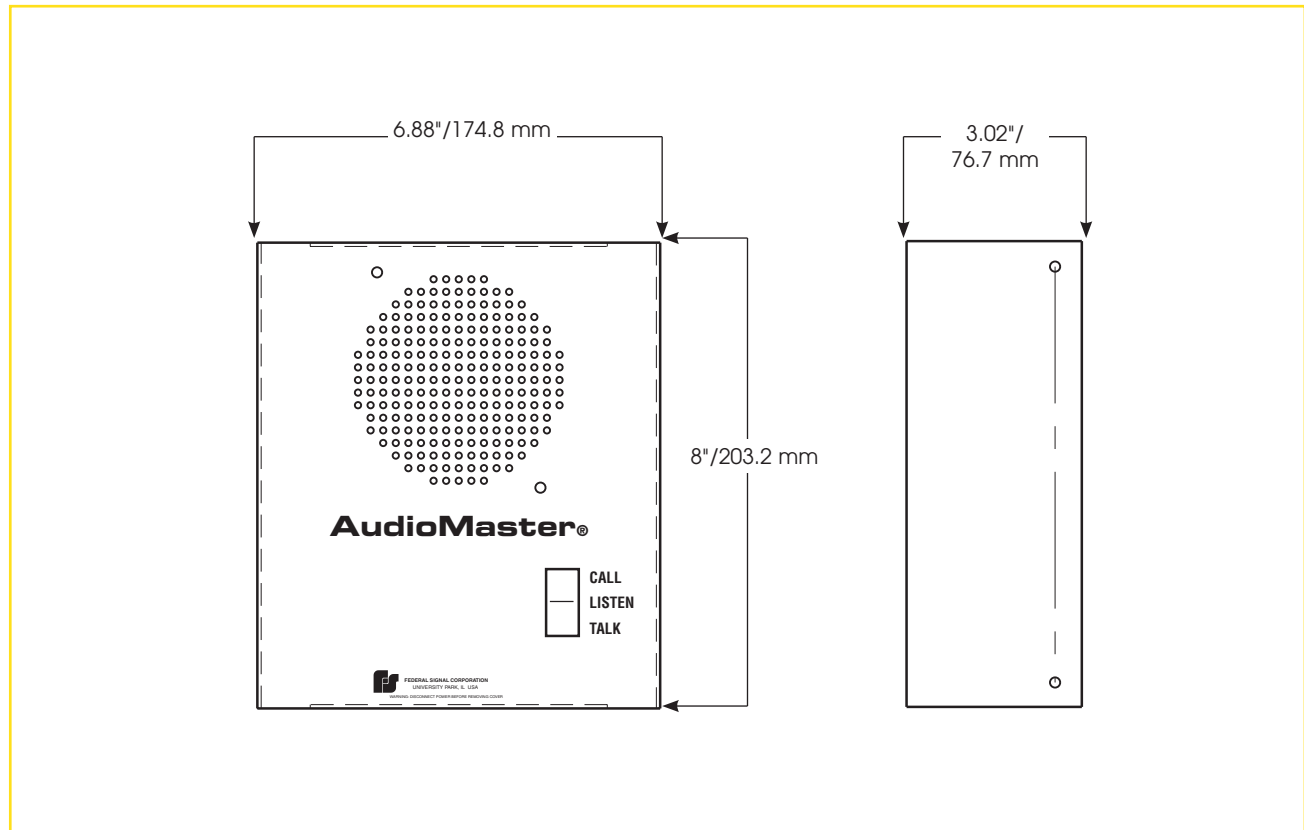
The AudioMaster Model 310LD-MV is UL Listed and CSA Certified.

The Model 310LD-MV is ideal for office environments and other dry, non-hazardous locations or anywhere reliable two-way communication is important for a safe efficient operation.

Model	Voltage	Operating Current	Standby Current	Frequency Response (-6dB)	Input Impedance
310LD-MV	24VDC	120mA	60mA	150Hz-12KHz	3400 ohms
	120VAC 50/60Hz	80mA	60mA	150Hz-12KHz	3400 ohms
	240VAC 50/60Hz	40mA	30mA	150Hz-12KHz	3400 ohms



LIGHT DUTY TWO-WAY INTERCOM (310LD-MV)



SPECIFICATIONS

Speaker Rating:	2 Watt	2 Watt
Operating Temperature:	-31°F to 150°F	-35°C to 66°C
Net. Weight:	3.2 lbs	1.45 kg
Shipping Weight:	3.9 lbs.	1.77 kg
Height:	8.0"	203.2 mm
Width:	6.88"	174.8 mm
Depth:	3.02"	76.7 mm

HOW TO ORDER

- Specify model number
- Please refer to Model Number Index 310LD-MV beginning on page 376

REPLACEMENT PARTS

<u>Description</u>	<u>Part Number</u>
PC Board Assembly	K2001290B
Resistor, 1K, 1W	K101216A
Fuses — F1, 250V	K144A125A
Switch	K122283A



VOICE COMMUNICATION SYSTEM FOR IN-PLANT USE

- Up to 9072 field stations
- Addressable intercom control with auto conference
- Public address, general alarm and intercom
- PBX and radio interface
- Ordinary location, hazardous area and weatherproof stations
- Supervised fault diagnostics
- Fiber optic ready
- Field programmable
- Pre-recorded messages
- Alarm functions
- Networkable and expandable
- Windows® based software
- Ambient noise monitoring / volume tracking

ECHO Digital Intercom System

ECHO digital intercom and communication systems provide addressable intercom, public address, general alarm, paging and telecommunication capabilities. A single ECHO system can provide the same level of safety, coverage and reliability normally achieved with multiple systems.

ECHO interfaces simply with a variety of third-party equipment, including fire and gas detection systems, auxiliary security systems and signals, PA/GA systems, two-way radios and telephone PBX. ECHO accepts multiple input sources for tones, pre-recorded voice messages, and background music. ECHO enables you to integrate all of your critical life safety, evacuation and communication systems.

Installation and commissioning is easy and cost effective. Off the shelf, two-conductor cable provides power, communication and control with a range of up to 2.4 miles (4km). Systems can be commissioned and customized quickly in the field or remotely with push button menu selections or a point-and-click software interface.

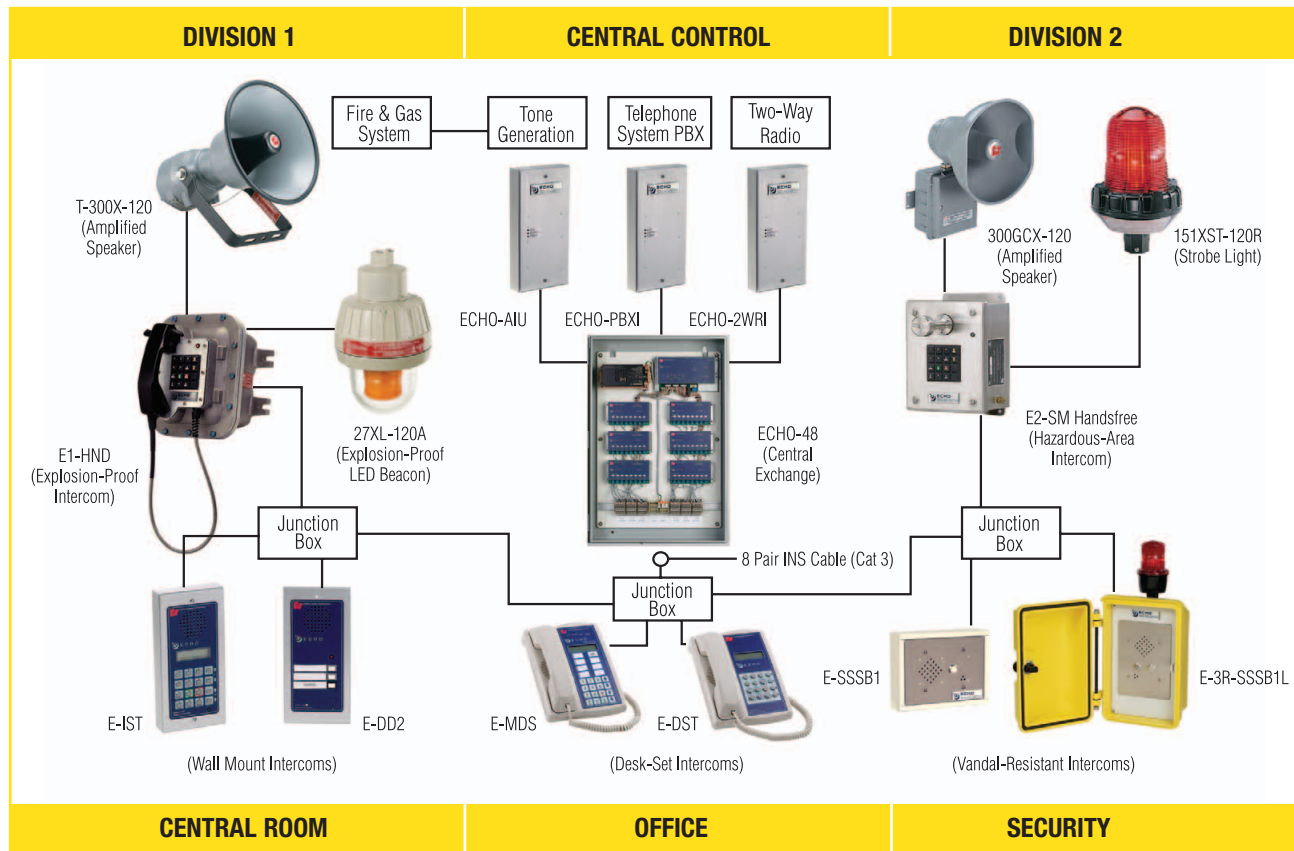
HOW TO ORDER

Contact our Federal Signal Sales Engineers to design a system that meets your specific requirements.

- Specify model

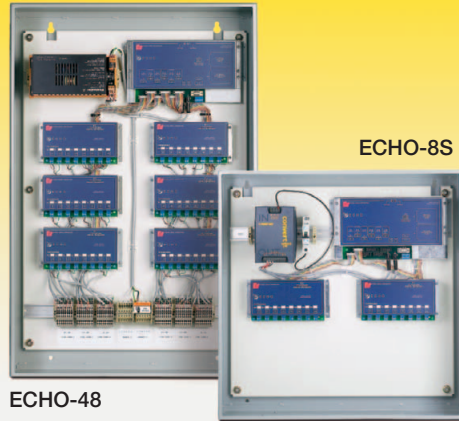


ECHO DIGITAL INTERCOM SYSTEM



Note: Power supplied to central cabinet and external powered loudspeakers and beacons only.

- Private communication, conference calls and public address
- System supervision and full fault diagnostics
- DSP technology provides crisp, clear communication and noise immunity
- Standard features include one-touch emergency paging, programmable station directory, speed dialing, caller ID and auto conference
- Hazardous-area, explosion-proof, panel mount, flush-mount, desktop, vandal-resistant and weather-proof stations
- Field programmable via Windows® interface software
- Handset, gooseneck microphone, headset, hands-free and single button communication options
- Fiber optic, PBX, two-way radio, radio pocket pager, public page and background music interfaces
- ECHO cancellation, noise and feedback elimination for digital quality/high intelligibility audio
- Industry standard low-cost wiring
- 24VDC, 120-240VAC
- Ambient noise monitoring automatically adjusts speaker volume to surpass ambient sound level



Digital Intercom And Communication System

Model ECHO-8 Through ECHO-48
Central Control

CENTRAL CONTROL: WALL OR RACK MOUNT

- Up to 9072 field stations
- Addressable intercom control with auto conference
- Public address, general alarm and intercom
- PBX and radio interface
- Ordinary location, hazardous area and weatherproof stations
- Supervised fault diagnostics
- Fiber optic ready
- Field programmable
- Pre-recorded messages
- Alarm functions
- Networkable and expandable
- Windows® based software
- Ambient noise monitoring / volume tracking

ECHO Digital intercom and communication systems provide addressable intercom, public address, general alarm, paging and telecommunication capabilities. A single ECHO system can provide the same level of safety, coverage and reliability normally achieved with multiple systems.

ECHO interfaces simply with a variety of third-party equipment, including fire and gas detection systems, auxiliary security systems and signals, PA/GA systems, two-way radios and telephone PBX. ECHO accepts multiple input sources for tones, pre-recorded voice messages, and background music. ECHO enables you to integrate all of your critical life safety, evacuation and communication systems.

Installation and commissioning is easy and cost effective. Off the shelf, two-conductor cable provides power, communication and control with a range of up to 2.4 miles (4km). Systems can be commissioned and customized quickly in the field or remotely with pushbutton menu selections or a point-and-click software interface. Spare parts are standardized and minimal.

HOW TO ORDER

Contact our Federal Signal Sales Engineers to design a system that meets your specific requirements.

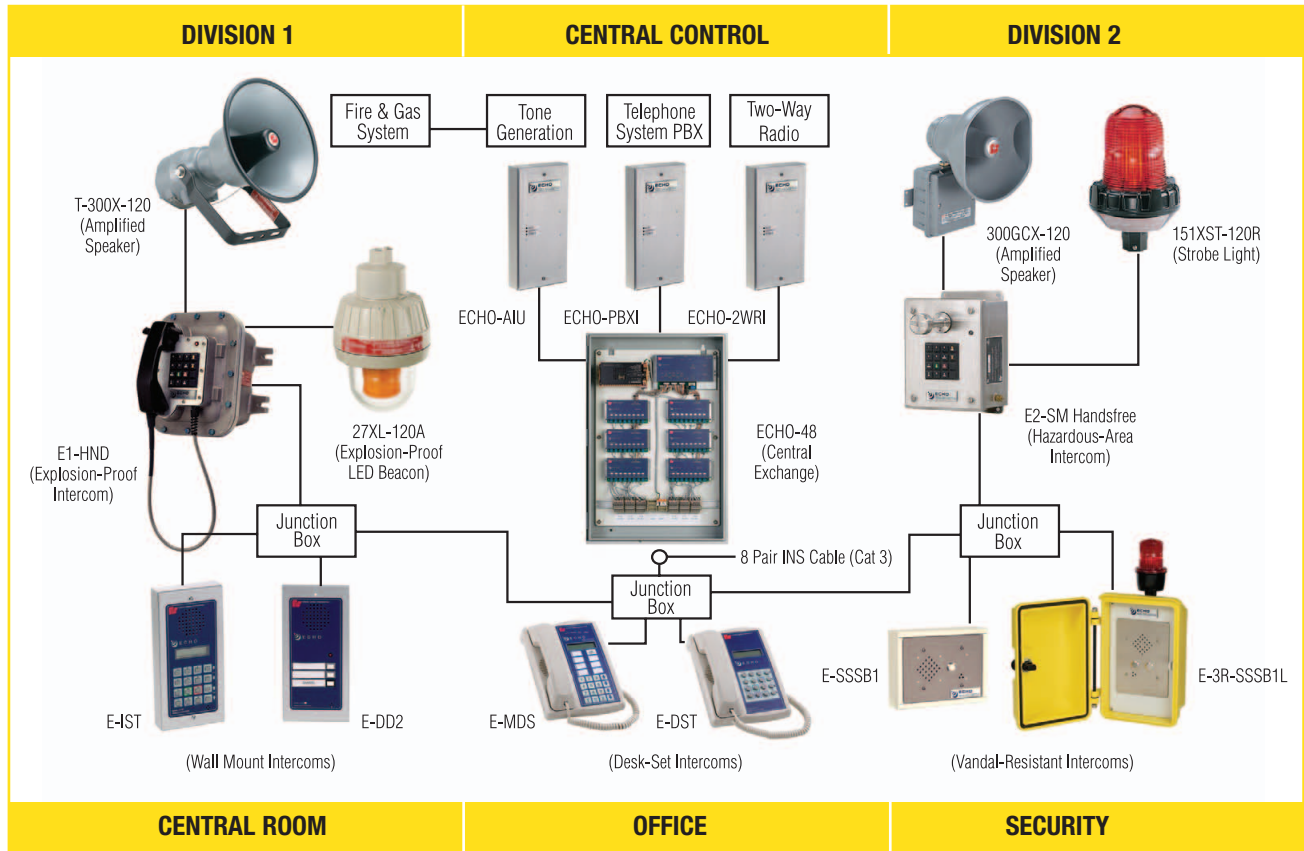
Considerations for system configuration:

- Specify model



CE ECHO

DIGITAL INTERCOM AND COMMUNICATION SYSTEM (ECHO 8 – ECHO 48)



- Private communication, conference calls and public address
- System supervision and fault diagnostics
- DSP technology provides crisp, clear communication and noise immunity
- Standard features include one-touch emergency paging, programmable station directory, speed dialing, caller ID and auto conference
- Hazardous-area, explosion proof, panel mount, flush-mount, desktop, vandal-resistant and weatherproof stations
- Handset, gooseneck microphone, headset, hands-free and single button communication options
- Fiber optic, PBX, two-way radio, radio pocket pager, public page and background music interfaces
- Field programmable via Windows interface software
- ECHO cancellation, noise and feedback elimination for digital quality/high intelligibility audio
- Industry standard low-cost wiring
- 24 VDC, 120-240 VAC
- Volume tracking automatically adjusts speaker volume to surpass ambient sound level

Rack Mounted ECHO System



NOTE: Power supplied to central cabinet and external powered loudspeakers and beacons only.



WALL MOUNT ECHO INTERCOM STATION

- Hands-free duplex voice communication
- Place calls to one or two predetermined locations
- Receive calls from any station in the system
- Remotely controlled contacts for gate/door activation
- Call status LED
- Remotely programmed using LCD stations or ECHO Windows® based software

Single And Dual Direct Dial Sub-Stations

Model ECHO E-DD

The Federal Signal Models E-DD1 and E-DD2 Single and Dual direct dial substations provide efficient, hands free duplex two-way voice communications with single button call capability. Applications include doors, dock areas or any location where limited call selection is needed. The stations instantly adjust volume levels to compensate for high ambient noise levels while providing instantaneous high-speed connections.

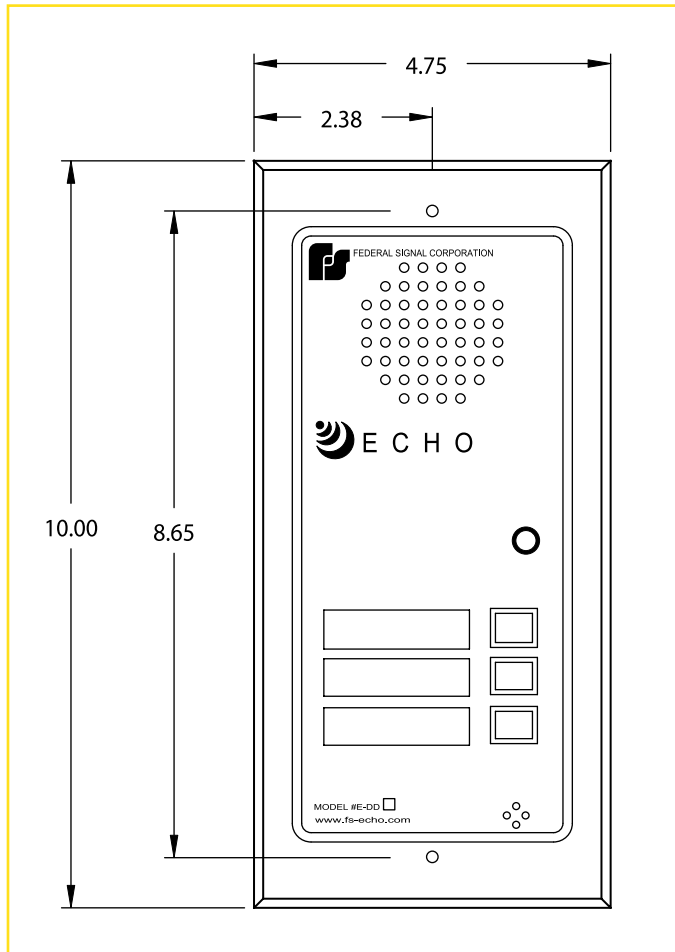
The E-DD1 / E-DD2 direct dial substations may be preprogrammed to call any other station in the system. E-DD1 Single Call Station can call one location, E-DD2 Dual Call Station can call two locations. By pressing the Call button on the station, a call will be placed to the station at the preprogrammed location. A call may be canceled by depressing the cancel button. Built-in relay contacts may be activated from the calling Master Station for remote door control or anything that a normally open dry contact can initiate.

The E-DD stations are constructed of heavy gauge anodized aluminum with a rugged Mylar face plate. The E-DD1 Single Call Station is equipped with one Call and one Cancel button and a Call Placed LED. The E-DD2 Dual Call Station has two Call buttons, one Cancel button and a Call Placed LED. Both units have built-in, heavy-duty relay contacts. The units are intended for indoor use with flush E-BB2 Back box or E-SMB Surface Box.

The E-DD stations may be programmed for call destination, volume level and other features using any LCD Station in the system or via the Windows based programming software Model ECHO-SFW.



SINGLE AND DUAL DIRECT DIAL SUB-STATIONS (E-DD1 / E-DD2)



OPTIONS



E-BB2 Flush Mount Back Box
Back Box For Flush Wall Mounting

MATERIAL:
Galvanised Steel

WEIGHT:
0.5 lbs / 0.230 kg

E-SMB Surface Mount Back Box
Back Box For Surface Wall Mounting

MATERIAL:
Anodised Aluminum

WEIGHT:
0.5 lbs / 0.230 kg



HOW TO ORDER

- Specify model:
Wall mounted single direct dial substation (E-DD1)
Wall mounted dual direct dial substation (E-DD2)
- Optional Accessories:
Fiber Optic Interface (ECHO-FOTI)
Back Box For Flush Mounting (E-BB2)
Back Box For Surface Mounting (E-SMB)

SPECIFICATIONS

Operating Voltage:	24VDC nominal (line driven from ECHO control)	Loop Resistance:	170 Ohm Max
Current Idle:	250mA	Distance:	1.2 miles 2km Max
Current Connected:	650mA	Cable:	One twisted pair, non-shielded
Microphone Type:	Electret	Termination	Plug-in screw terminal, non-polar
Microphone Sensitivity:	-70dB	Relay Switching Capacity:	5A at 24VDC 3A at 240VAC
Audio Output:	1.0 Watt	Net Weight:	1.5 lbs 0.68kg
Loudspeaker Size:	2.5 in	Shipping Weight:	1.2 lbs 0.5kg
Loudspeaker Impedence:	45 ohms	Shipping Dimensions:	13.25" x 7.13" x 3" 337cm x 181cm x 76cm
Volume Control via Keypad:	30dB in ten steps		
Line Attenuation:	24dB@160kb/s Max		



Desktop Or Wall Mount Intercom Stations

Model ECHO E-DS

COMPACT NEMA 1 STATION

- Handset or speakerphone duplex voice communication
- ADA compliant volume levels and controls
- Large LCD display with directory scroll
- Requires only one twisted pair of wires
- Speed dial and auto conference
- Caller ID
- Dedicated paging buttons (All Call & Priority)

Federal Signal Models E-DST (tactile keypad), E-DSM (membrane keypad), E-DSMG (membrane keypad with gooseneck mic), are NEMA 1 handset intercom stations that may be used on a desktop or surface / wall mount application to provide speaker phone or private handset duplex two-way voice communication with LCD visual status display. The station's digital signal processor instantly adjusts speakerphone volume levels to compensate for high ambient noise while providing high-speed connections and clear, crisp voice quality from anywhere in the room. The large, easy-to-read LCD display provides information to identify the name and number of each calling party, provides a name and number directory and an on-line help menu.

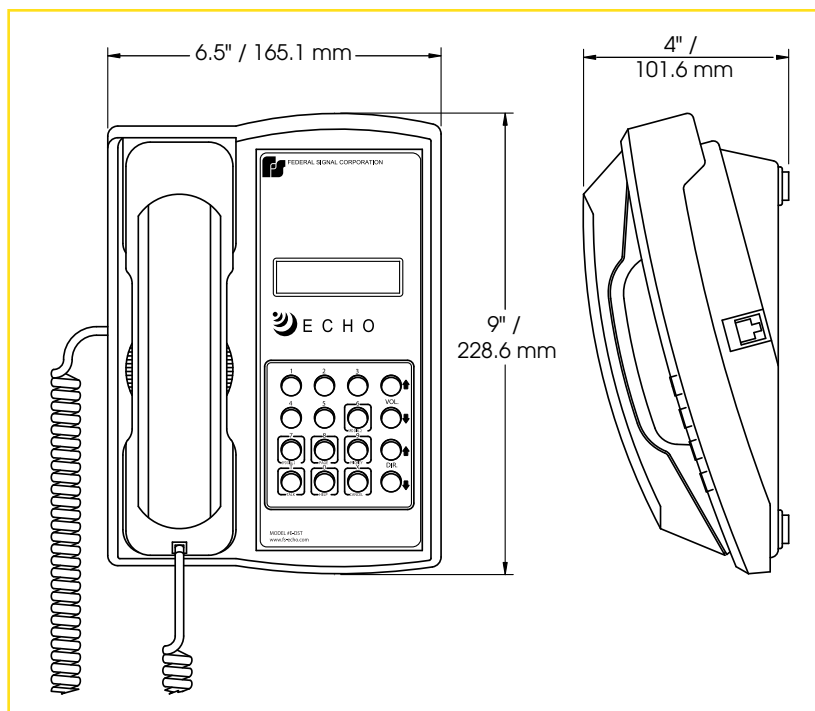
The Models E-DST, E-DSM, E-DSMG Handset Call Stations can call any other station in the system and are capable of full duplex communication using the handset. Since the Digital Central Exchange can process calls simultaneously, there is no dial tone or delay. After keying in the two digits, the call can be connected immediately. The keypad provides tactile and audible feedback for positive activation. The LCD display at each Master station shows the called and calling station ID. A station may be preset to any of four levels of privacy for receiving calls; Non-Private, Semi-Private, Full Privacy, and DND (Do Not Disturb). Volume for both the handset and speaker phone can be adjusted.

The compact console unit is equipped with a handset, panel speaker and electret microphone. A standard 16 button keypad and LCD display with 2 lines of 16 characters is provided. The unit is intended for indoor use.



CE ECHO

DESKTOP OR WALL MOUNT INTERCOM STATIONS (E-DS)



HOW TO ORDER

- Specify model:
 Desk or wall mounted station with tactile keypad (E-DST)
 Desk or wall mounted station with membrane keypad (E-DSM)
 Desk or wall mounted station with a gooseneck microphone instead of a panel microphone (E-DSMG)
- Optional Accessories:
 Fiber Optic Interface (ECHO-FOTI)

SPECIFICATIONS

Operating Voltage:	24VDC nominal (line driven from ECHO control)	Keypad Construction:	E-DST E-DSM	Grey Conductive Rubber Membrane Keys
Current Idle:	25mA	Line Attenuation:		24dB@160kb/s Max
Current Connected:	100mA	Loop Resistance:		170 Ohm Max
Microphone Type:	Electret	Distance:	1.2 miles 2km Max	
Microphone Sensitivity:	70dB	Cable:		One twisted pair, non-shielded
Audio Output:	1.0 Watt	Termination:		Plug-in screw terminal, non-polar
Enclosure Material:	ABS Flame-Retardant	Net Weight:	2.2 lbs 1.0kg	
Display LCD:	2 lines, 16 characters/line	Shipping Weight:	2.5 lbs 1.1kg	
Volume Control via Keypad:	30dB in ten steps	Shipping Dimensions:	10.5" x 7.00" x 7.5" 267mm x 178mm x 191mm	





Administrative Master Station

Model ECHO E-MDS

DESK OR WALL MOUNT ADMINISTRATIVE MASTER STATION

- Multiple simultaneous substation call stacking and display
- 10 levels of priority for substation calls
- Flexible substation ownership
- All-call and priority all-call
- Audible alert with tone silence and resound
- Partitioning
- Call placed indicators; routine and emergency
- Desktop or wall mount
- Call engineer light, system diagnostics and alarm tone

Federal Signal Model E-MDS Management Station is used with ECHO® Systems to provide hands-free or private handset duplex two-way voice communication. The LCD call status display provides the ability to review and respond to Substation calls out of sequence. Programmable buttons provide single touch access for features such as Conference, All-Call and Group Call. The large, easy to read LCD display provides vital information to identify the name and location of each calling party, name and number directory as well as an on-line help menu to personalize station features.

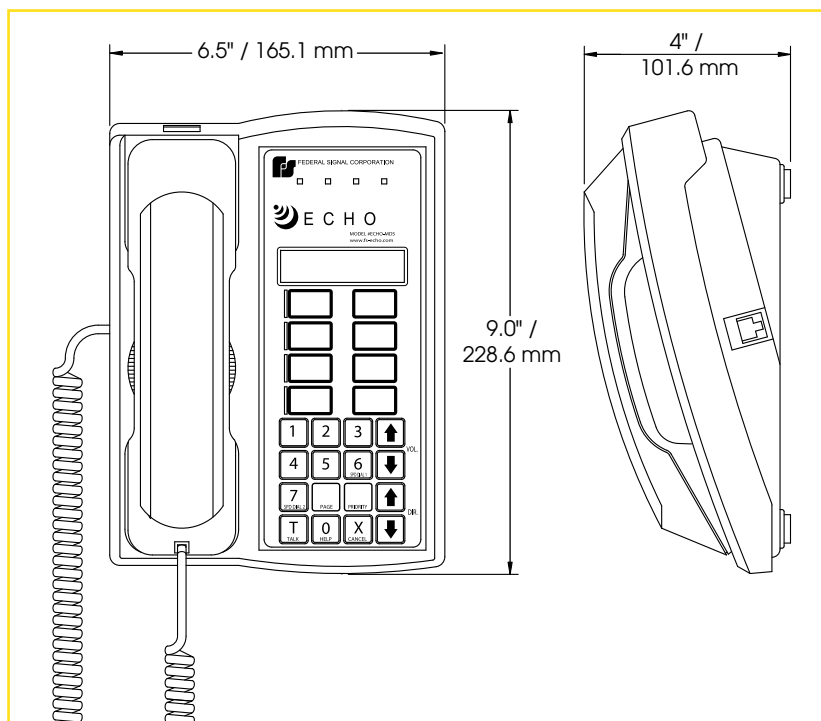
The E-MDS Management Station can be programmed to call any other station in the system. Calls from other masters may be programmed to ring or answer automatically in the speakerphone mode. Master-to-Master calls may manually Camp-on, Message-wait and Pre-empt. Calls from Substations will be stacked in a queue by priority and may be answered or reviewed in any order. Substations may each be assigned any of 10 text call messages for Routine or Emergency levels with selectable locking or Non-locking status. Substations can be programmed to report to one, several, or all E-MDS Management Masters. In the Night Mode, one Management Station can assume ownership of another's sub-stations. The keypad volume control keys may be used to adjust voice and ring levels.

This compact unit may be used in a desk top or surface wall mount application. The unit is equipped with a handset, panel microphone and speaker. The flush membrane keypad provides tactile and audible feed back for positive activation. The Model E-MDSMG is furnished with a gooseneck push-to-talk microphone.



CE ECHO

ADMINISTRATIVE MASTER STATION (E-MDS)

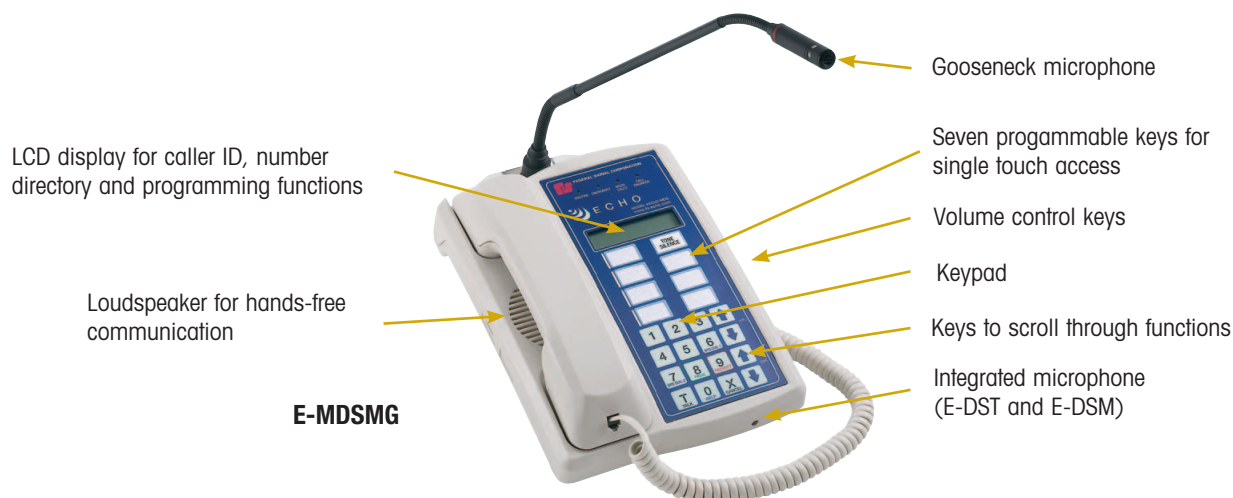


HOW TO ORDER

- Specify model:
 Desk or wall mounted administrative master station with membrane keypad (E-MDS)
 Desk or wall mounted administrative master station with 415mm a goose-neck microphone instead of a panel microphone (E-MDSMG)
 Flush mount administration master station with membrane keypad (E-MWS)
- Optional Accessories:
 Fiber Optic Interface (ECHO-FOTI)

SPECIFICATIONS

Operating Voltage:	24VDC nominal (line driven from ECHO control)	Keypad Construction:	Membrane Keys
Current Idle:	250mA	Line Attenuation:	24dB@160kb/s Max
Current Connected:	650mA	Loop Resistance:	170 Ohm Max
Microphone Type:	Electret	Distance:	2km (1.2 miles) Max
Microphone Sensitivity:	-70dB	Cable:	One twisted pair, non-shielded
Audio Output:	1.0 Watt	Termination:	Plug-in screw terminal, non-polar
Enclosure Material:	ABS Flame-Retardant	Net Weight:	2.2 lbs 1.0kg
Display LCD:	2 lines, 16 characters/line	Shipping Weight:	2.5 lbs 1.1kg
Volume Control via Keypad:	30dB in ten steps	Shipping Dimensions:	10.5" x 7" x 7.5" 267mm x 178mm x 191mm





**DESK OR WALL MOUNT
ADMINISTRATIVE
MASTER STATION**

- Corrosion and vandal resistant design
- Private full duplex handset communication
- Headset, gooseneck microphone and handset options
- Single touch speed dialing
- Group call, all-call, priority call
- Simple one pair wiring
- Output to powered loudspeaker
- IP66

Weather Proof Digital Intercom Stations

Model ECHO E-EWP

Federal Signal Model EWP ECHO Intercom Stations provide safe and efficient two-way voice communications in large and small ECHO Digital Intercom Systems.

The EWP ECHO station provides instantaneous high-speed connections and clear, crisp digital voice quality. Each station offers single-button all call, priority emergency paging, group paging, speed dial, conference call, and relay output.

Any station can call any other station(s) in an ECHO Digital Intercom System. With the headset or gooseneck microphone options, each is capable of hands-free voice communication. Because the ECHO Digital Central Exchange provides 30 channels of simultaneous communication, calls are processed and connected immediately without dial tone or delay.

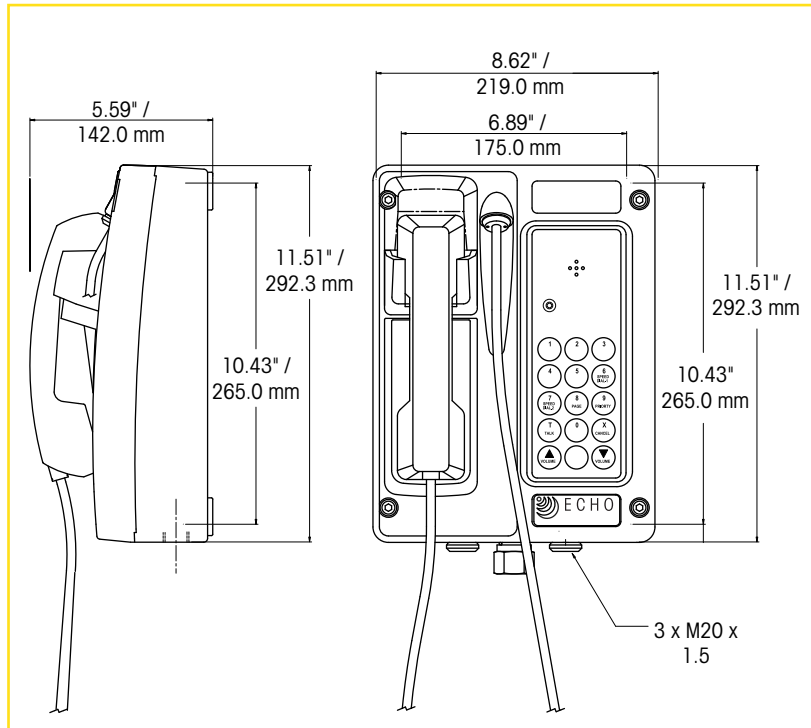
The EWP Station keypad is designed to provide tactile and audible feedback (via external powered loudspeaker) for a positive activation. Each station may be programmed for four levels of privacy for receiving calls; non-private, semi-private, full privacy and do-not-disturb. Volume for voice and signal levels are easily adjusted on the keypad.

Each EWP Station is constructed of heavy duty glass reinforced polyester (GRP), equipped with a weatherproof keypad, and are rated for use in IP66 dust- and water-tight applications.



CE ECHO

WEATHER PROOF DIGITAL INTERCOM STATIONS (E-EWP)



HOW TO ORDER

- Specify model:
Handset, 1.8m curly cord (EWP-HND-C)
Handset, 1.0m stainless steel cord (EWP-HND-S)
Jack station (EWP-JS)
Stubby microphone, 65mm (EWP-SM)
Gooseneck microphone, 260mm (EWP-GM1)
Gooseneck microphone, 440mm (EWP-GM2)
Gooseneck microphone, 590mm (EWP-GM3)
Relay, EWP (K131240A)
- Optional Accessories:
Headset (K137149A-01)
10m Headset extension cord (K1751234A)
Handset with 10m curly cord (detachable) (K8601272A-01)

SPECIFICATIONS

Operating Voltage:	24VDC nominal (line driven from ECHO control)	Loop Resistance:	170 Ohm Max
Current Idle:	25mA	Distance:	1.2 miles 2.0 km Max
Current Connected:	100mA max.	Cable:	One twisted pair, non-shielded
Handset Microphone Type:	Dynamic	Cable Entries:	3 x M20
Handset Material:	Moulded Polyurethane	Operating Temperature Range:	-35C to +70C
Handset Cord:	Stainless Steel	Termination:	Plug-in screw terminal, non-polar
Stubby Microphone Type:	Dynamic	Relay Switching Capacity:	3A at 240VAC
Stubby Microphone Sensitivity:	-54dB	Shipping Dimensions:	6.25" x 9.5" x 9.25" 413mm x 241mm x 235mm
Stubby Microphone Enclosure:	Stainless Steel	Net Weight:	9.5 lbs 4.3kg
Audio Output:	2.7 Vrms / 1.0k ohm load	Shipping Weight:	11.1 lbs 5.1kg
Volume Control via Keypad:	30dB in ten steps	Shipping Dimensions:	16.25" x 9.5" x 9.25" 413mm x 241mm x 235mm
Line Attenuation:	24dB@160kb/s Max		

OPTIONS

Headset	K137149A-01
10m Headset extension cord	K1751234A
Handset with 10m curly cord (detachable)	K8601272A-01



EWP-GM1



EWP-JS



EWP-SM



HAZARDOUS AREA INTERCOM STATION

- All stainless steel construction
- Super-bright LED indicator
- Tactile keypad
- Headset, gooseneck microphone and handset options
- Output to powered loudspeaker
- Designed for Type 4X, IP66
- UL and cUL Listed

Class I, Division 2 Digital Intercom Stations

Model ECHO E2

Federal Signal Model E2 ECHO Intercom Stations provide safe and efficient two-way voice communications in large and small ECHO Digital Intercom Systems. The E2 ECHO Station is designed and approved for use in Hazardous Areas including Class 1, Division 2, Groups A, B, C, and D; Class II, Division 2, Groups F and G; and Class III.

The E2 ECHO station provides instantaneous high-speed connections and clear, crisp digital voice quality. Each station offers single-button all call, priority emergency paging, group paging, speed dial, conference call, and relay output.

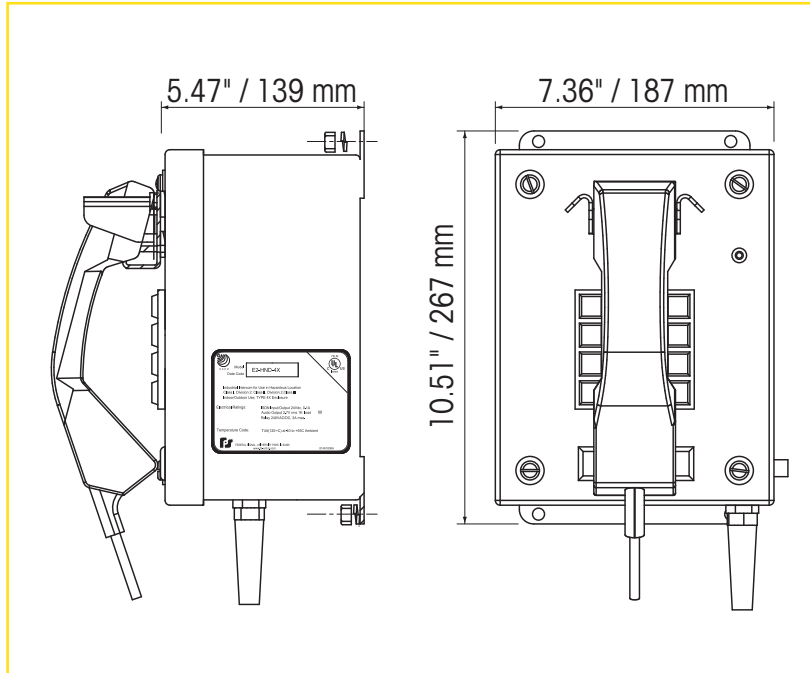
Any station can call any other station(s) in an ECHO Digital Intercom System. With the headset or gooseneck microphone options, each is capable of hands-free voice communication. Because the ECHO Digital Central Exchange provides 30 channels of simultaneous communication, calls are processed and connected immediately without dial tone or delay.

The E2 Station keypad is designed to provide tactile and audible feedback (via external powered loudspeaker) for positive activation. Each station may be programmed for four levels of privacy for receiving calls; non-private, semi-private, full privacy and do-not-disturb. Volume for voice and signal levels are easily adjusted on the keypad.

Each E2 Station is constructed of heavy duty, corrosion –resistant stainless steel, equipped with weatherproof keypads, and are rated for use in Type 4X dust- and water-tight applications.



CLASS I, DIVISION 2 DIGITAL INTERCOM STATIONS (E2)



HOW TO ORDER

- Specify model:
 Station with Handset (E2-HND)
 Station with Stubby Microphone (65mm) (E2-SM)
 Station with Headset (E2-HDS)
 E2-HND in 4X enclosure (IP66) (E2-HND-4X)
 E2-SM in 4X enclosure (IP66) (E2-SM-4X)
 E2-HDS in 4X enclosure (IP66) (E2-HDS-4X)
 Gooseneck microphone, 260mm (E2-GM1)
 Gooseneck microphone, 440mm (E2-GM2)
 Gooseneck microphone, 590mm (E2-GM3)

SPECIFICATIONS

Operating Voltage:	24VDC nominal (line driven from ECHO control)	Line Attenuation:	24dB@160kb/s Max
Current Idle:	25ma	Loop Resistance:	170 Ohm Max
Current Connected:	100ma	Distance:	1.2 miles 2 km Max
Handset Microphone Type:	Dynamic	Cable:	One twisted pair, non-shielded
Handset Material:	Moulded Polycarbonate/ABS Blend	Cable Entries:	.88" 3 x Ø22mm Hole
Handset Cord:	Stainless Steel	Operating Temperature Range:	-40C to +65C
Stubby Microphone Type:	Dynamic	Termination:	Plug-in screw terminal, non-polar
Stubby Microphone Sensitivity:	-54dB	Relay Switching Capacity:	3A at 240VAC
Stubby Microphone Enclosure:	Stainless Steel	Net Weight:	9.9 lbs 4.5kg)
Audio Output:	2.7 Vrms , 1k load	Shipping Weight:	14.8 lbs 6.7kg
Volume Control via Keypad:	30dB in ten steps	Shipping Dimensions:	20.63" x 14.13" x 13.63" 524mm x 359mm x 346mm



E2-SM



E2-HDS



E2-SM-4X



EXPLOSION PROOF INTERCOM STATION

- Stainless steel hardware
- Super-bright LED indicator
- Tactile keypad
- Speed dial / auto conference
- Headset, gooseneck and handset options
- Output to powered loudspeaker
- Hinged front cover
- Designed for Type 4X
- UL and cUL Listed

Explosion Proof Digital Intercom Stations

Model ECHO E1

Federal Signal Model E1 ECHO Intercom Stations provide safe and efficient two-way voice communications in large and small ECHO Digital Intercom Systems. The E1 ECHO Station is designed and approved for use in Hazardous Areas including Class I, Division 1, Groups C and D; Class II, Division 1, Groups E, F and G; and Class III.

The E1 ECHO station provides instantaneous high-speed connections and clear, crisp digital voice quality. Each station offers single-button all call, priority emergency paging, group paging, speed dial, conference call, and relay output.

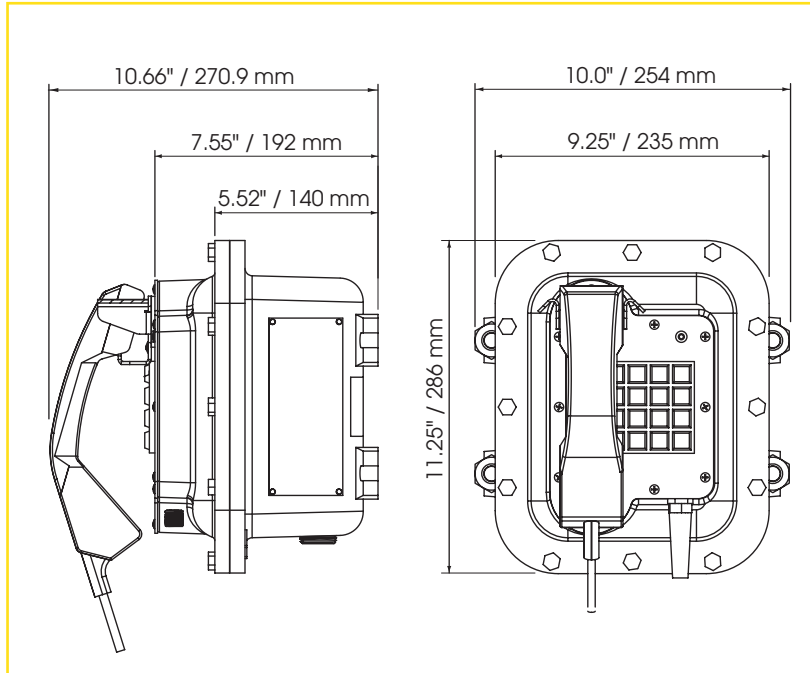
Any station can call any other station(s) in an ECHO Digital Intercom System. With the headset or gooseneck microphone options, each is capable of hands-free voice communication. Because the ECHO Digital Central Exchange provides 30 channels of simultaneous communication, calls are processed and connected immediately without dial tone or delay.

The E1 Station keypad is designed to provide tactile and audible feedback (via external powered speaker) for positive activation. Each station may be programmed for four levels of privacy for receiving calls; non-private, semi-private, full privacy and do-not-disturb. Volume for voice and signal levels are easily adjusted on the keypad.

Each E1 Station is constructed with a heavy duty, corrosion –resistant cast aluminum and a powder coated aluminum faceplate, equipped with weatherproof keypads, and is rated for use in Type 4X dust- and water-tight applications.



EXPLOSION PROOF DIGITAL INTERCOM STATIONS (E1)



HOW TO ORDER

- Specify model:
 - Station with Handset (E1-HND)
 - Station with Headset (E1-HDS)
 - E1-HND in 4X enclosure (E1-HND-4X)
 - E1-SM in 4X enclosure (E1-SM-4X)
 - E1-HDS in 4X enclosure (E1-HDS-4X)
 - Stubby Microphone, 65mm (E1-SM)
 - Gooseneck Microphone, 260mm (E1-GM1)
 - Gooseneck Microphone, 440mm (E1-GM2)
 - Gooseneck Microphone, 590mm (E1-GM2 E1)

SPECIFICATIONS

Operating Voltage:	24VDC nominal (line driven from ECHO control)	Line Attenuation:	24dB@160kb/s Max
Current Idle:	25mA	Loop Resistance:	170 Ohm Max
Current Connected:	100mA max.	Distance:	1.2 miles 2.0 kms Max
Handset Microphone Type:	Dynamic	Cable:	One twisted pair, non-shielded
Handset Material:	Moulded Polycarbonate/ABS Blend	Cable Entries:	3 x 3/4" NPT
Handset Cord:	Stainless Steel	Operating Temperature Range:	-40°C to +65°C
Stubby Microphone Type:	Dynamic	Termination:	Din rail mount tensioned clamp terminals
Stubby Mic Sensitivity:	-54dB	Relay Switching Capacity:	3A at 240VAC
Stubby Mic Enclosure:	Stainless Steel	Net Weight:	25 lbs 11.4 kg
Audio Output:	2.7 Vrms / 1k ohm load	Shipping Weight:	30 lbs 13.6 kg
Volume Control via Keypad:	30dB in ten steps	Shipping Dimensions:	20.63" x 14.13" x 13.63" 524mm x 359mm x 346mm





HAZARDOUS LOCATION INTERCOM STATION•

- Corrosion and vandal resistant design
- Private full duplex handset communication
- Headset, gooseneck microphone and handset options
- Single touch speed dialing
- Group call, all-call, priority call, auto conference
- Simple one pair wiring
- Output to powered loudspeaker
- IP66

Zone 1 Digital Intercom Stations

Model ECHO EZ1

Federal Signal Model EZ1 ECHO Intercom Stations provide safe and efficient two-way voice communications in large and small ECHO Digital Intercom Systems. The EZ1 ECHO Station is designed and approved for use in Zone 1 Hazardous Areas, Ex II 2 G EEx meib IIC T6.

The EZ1 ECHO ATEX station provides instantaneous high-speed connections and clear, crisp digital voice quality. Each station offers single-button all call, priority emergency paging, group paging, speed dial, conference call, and relay output.

Any station can call any other station(s) in an ECHO Digital Intercom System. With the headset or gooseneck microphone options, each is capable of hands-free voice communication. Because the ECHO Digital Central Exchange provides 30 channels of simultaneous communication, calls are processed and connected immediately without dial tone or delay.

The EZ1 Station keypad is designed to provide tactile and audible feedback (via external powered loudspeaker) for a positive activation. Each station may be programmed for four levels of privacy for receiving calls; non-private, semi-private, full privacy and do-not-disturb. Volume for voice and signal levels are easily adjusted on the keypad.

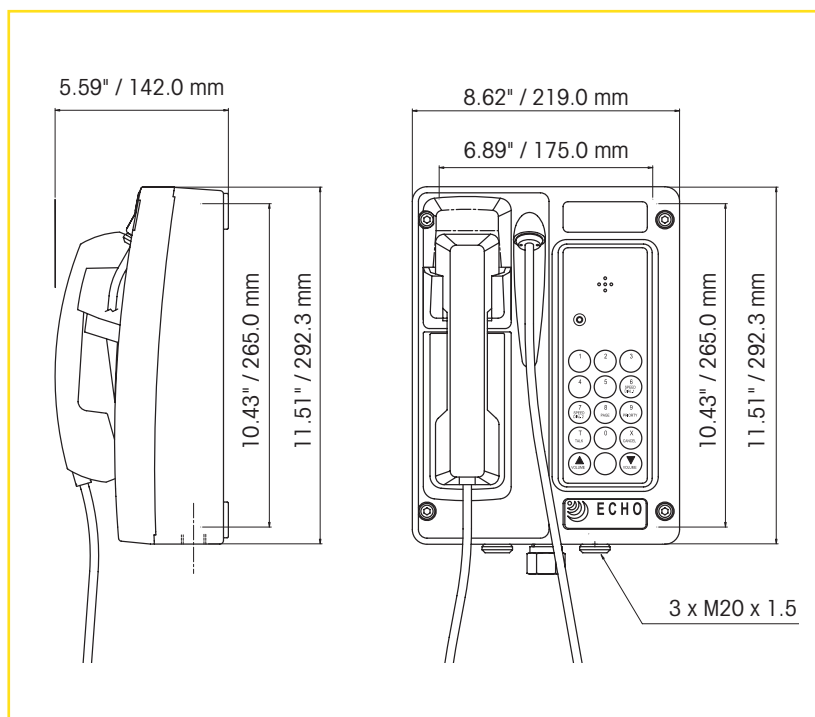
Each EZ1 Station is constructed of heavy duty glass reinforced polyester (GRP), equipped with a weatherproof keypad, and are rated for use in IP66 dust- and water-tight applications.



ECHO

ATEX  **CE**

ZONE 1 DIGITAL INTERCOM STATIONS (EZ1)



HOW TO ORDER

- Specify model:
 - Handset, 1.8m curly cord (EZ1-HND-C)
 - Handset, 1.0m stainless steel cord (EZ1-HND-S)
 - Jack station (EZ1-JS)
 - Stubby microphone, 65mm (EZ1-SM)
 - Gooseneck microphone, 260mm (EZ1-GM1)
 - Gooseneck microphone, 440mm (EZ1-GM2)
 - Gooseneck microphone, 590mm (EZ1-GM3)
 - Potted relay assembly, EZ1 (K8601241A)
- Optional Accessories:
 - Headset (K137149A-01)
 - 10m Headset extension cord (K1751234A)
 - Handset with 10m curly cord (detachable) (K8601272A-01)

SPECIFICATIONS

Operating Voltage:	24VDC nominal (line driven from ECHO control)	Distance:	1.2 miles	2.0km Max
Current Idle:	25mA	Cable:	One twisted pair, non-shielded	
Current Connected:	100mA	Cable Entries (bottom):	3 x M20	
Handset Microphone Type:	Dynamic	Operating Temperature Range:	-35C to +50C (T6)	
Handset Material:	Moulded Polyurethane	Termination:	EEx e screw terminal block	
Handset Cord:	Stainless Steel	Relay Switching Capacity:	3A at 240VAC	
Stubby Microphone Type:	Dynamic	Net Weight:	9.5 lbs	4.3kg
Stubby Microphone Sensitivity:	-54dB	Shipping Weight:	11.1 lbs	5.1kg
Stubby Microphone Enclosure:	Stainless Steel	Shipping Dimensions:	16.25" x 9.5" x 9.25"	
Audio Output:	2.7 Vrms / 1.0k ohm load		413mm x 241mm x 235mm	
Volume Control via Keypad:	30dB in ten steps	Certificate Number:	BAS01ATEX2306X	
Line Attenuation:	24dB@160kb/s Max	Classification Marking:	II 2 G EEx meib IIC T6	
Loop Resistance:	170 Ohm Max	Ingress Protection:	IP66 (IP65 on handset)	



EZ1-GM1



EZ1-SM